

REMARKS/ARGUMENTS

Applicant respectfully requests reconsideration of this application in view of the following remarks.

Claim Objections

The Office (page 2) has objected to Claim 9 on lines 16 and 18 based on an antecedent basis.

Claim 9 is reproduced below for ease of examination with respective line numbers added as well as added emphasis.

Line 1 9. A circuit comprising:

- 2 a first transistor having a control terminal, an input terminal, and an output terminal,
- 3 wherein said first transistor control terminal is coupled to **a first feedback control block**
- 4 **output** and said first transistor input terminal is coupled to receive a positive supply voltage;
- 5 a second transistor having a control terminal, an input terminal, and an output terminal, wherein said second transistor control terminal is coupled to receive a data signal
- 6 and said second transistor input terminal is coupled to said first transistor output terminal;
- 7 a third transistor having a control terminal, an input terminal, and an output terminal,
- 8 wherein said third transistor control terminal is coupled to receive said data signal and said
- 9 third transistor output terminal is coupled to said second transistor output terminal;
- 10 a fourth transistor having a control terminal, an input terminal, and an output terminal, wherein said fourth transistor control terminal is coupled to **a second feedback**

13 **control block output**, said fourth transistor output terminal is coupled to said third
transistor

14 input terminal, and said fourth transistor input terminal is coupled to receive a supply
voltage

15 less positive than said positive supply voltage;

16 **a first feedback control block having an input and said first feedback control
block**

17 **output**, wherein said first feedback control block input is coupled to said second
transistor

18 output terminal; and

19 **a second feedback control block having an input and said second feedback
control**

20 **block output**, wherein said second feedback control block input is coupled to said third
transistor output terminal.

Applicants appreciate the Examiner's attention to detail, however, respectfully
disagree that Claim 9 correction is required.

Applicants submit that there are 3 elements for each "feedback control block" in
claim 9 and they are as follows with brackets indicating the line number of first use
requiring an antecedent basis and parenthesis indicating line numbers of subsequent
use:

For the first feedback control block

1. a first feedback control block [16]
2. a first feedback control block input [16]
3. a first feedback control block output [3-4] (16-17)

For the second feedback control block

1. a second feedback control block	[19]
2. a second feedback control block input	[19]
3. a second feedback control block output	[12-13] (19-20)

Applicants submit that proper antecedent basis has been observed and respectfully request removal of this objection for claim 9.

Claim 4 Rejection under 35 U.S.C. § 112

The Office states on page 2:

According to claim 4, the recitation " said sensed signal and said controlling are separated by less than two delays in time" is indefinite because it is not clear "said sense signal and said controlling" is meant by. It is not clear as to "controlling" is the control signal or the action of controlling a device of the circuit.

Claims 1, 2, and 4 are:

1. A method for dynamically controlling an output driver stage comprising:
sensing a signal from an output from said output driver stage; and
controlling said output driver stage based on said sensed signal.
2. The method of claim 1 wherein said output driver stage comprises two or more stacked transistors.
4. The method of claim 2 wherein said sensed signal and said controlling are separated by less than two gate delays in time.

Applicants note that Claim 4 nowhere uses the language “control signal” as stated in the Office Action. Applicants submit that “said sensed signal” is clearly denoted as in line 2 of claim 1. That is “said sensed signal” refers to “sensing a signal from an output from said output driver stage.” Applicants submit that “said controlling” is clearly denoted as in line 3 of claim 1. That is “said controlling” refers to “controlling said output driver stage based on said sensed signal.” Further Applicants submit sensing and controlling may be related to each other temporally and that “less than two gate delays in time” clearly denotes this relationship.

Applicants submit that Claim 4 as written particularly points out and distinctly claims the subject matter which the applicants regard as their invention. Applicants therefore request removal of this rejection.

Claim 20 Rejection under 35 U.S.C. § 112

The Office states on page 2 that claim 20 is indefinite because it is “misdescriptive.” This is based on the Office interpreting Figure 4. Applicants to more particularly point out and distinctly claim the subject matter which the applicants regard as their invention have amended the application to include Figure 10A, Figure 10B, and Figure 10C and descriptions of the Figure 10A, Figure 10B, and Figure 10C. No new matter has been added and support for Figure 10A, Figure 10B, and Figure 10C and the descriptions of the Figure 10A, Figure 10B, and Figure 10C may be found at claim 18, claim 19, and claim 20 as originally submitted.

Applicants submit that claim 20 as per the amended application is not indefinite and Applicants therefore request removal of this rejection.

Claim 21 Rejection under 35 U.S.C. § 112

The Office states on page 2 that claim 21 is indefinite yet provides no explanation. Applicants assume that this is based on claim 20 upon which claim 21 is dependent. Applicants submit that claim 20 as per the amended application is not indefinite and therefore claim 21 which is dependent on claim 20 is not indefinite. Applicants therefore request removal of this rejection.

Claims 24-27 Rejection under 35 U.S.C. § 112

The Office states on page 2:

Regarding claim 24, the recitation "feeding back to said one or more transistors a portion of said output" is indefinite because it is misdescriptive. Figure 4 of the present application shows that the feedback devices are resistive elements that is coupled directly from the output of the circuit to the control terminals of the transistors thus, the whole output voltage is feedback not a portion of the output as recited.

Firstly, Applicants never stated in claim 24 that it was represented by Figure 4. The Office has focused on a single Figure showing a single embodiment to the exclusion of the other figures to try and foster support for a rejection. For example, Figure 7 also shows an embodiment of the invention and the description clearly details how a portion of said output is fed back to said one or more transistors. Applicants submit that claim 24 is not indefinite and request removal of the rejection for claim 24 and for claims 25-27 which are dependent on claim 24.

Secondly, *assuming arguendo*, that Figure 4 is representative of claim 24, as one of skill in the art is aware, and as is the Office is aware, the “resistive” elements that the Office refers to are not without losses and other electrical parameters such as capacitance and so the assertion that the “whole output voltage” is fed back is not correct.

Thirdly, the Office jumps to the conclusion that Applicants’ claim 24 is dealing with a voltage feedback signal. Applicants’ claim 24 has no such language.

For the above reasons, Applicants submit that claim 24 is not indefinite and request removal of the rejection for claim 24 and for claims 25-27 which are dependent on claim 24.

Claims 1-4 Rejection under 35 U.S.C. § 102(b) – Michail et al.

The Office states on page 3:

Regarding claims 1-4, figure 1 of Michail shows a method for dynamically controlling an output driver stage comprising:

sensing a signal from an output from said output driver stage (feedback network 110, 112); and

controlling said output driver stage based on said sensed signal.

The Office rejects claims 1-4 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,769,649 issued to Michail et al. (“Michail”). Applicants respectfully assert

that a *prima facie* rejection of claims 1 through 4 under 35 U.S.C. § 102(b) based upon Michail should be withdrawn. In order to establish a *prima facie* rejection under 35 U.S.C. § 102(b), the United States Patent & Trademark Office (USPTO) must provide a "single prior art reference [in which] disclosure of each and every element of the claimed invention, *arranged as in the claim* [exists in the reference]." *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick* ("Lindemann"), 730 F.2d 1452, 1458 (Fed. Cir. 1984) (emphasis added). Additionally, each and every element of the claim must be *exactly* disclosed in the anticipatory reference. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 777 (Fed. Cir. 1985).

Applicants submit that a close examination of Michail Figure 1 (see 120 connected to Vdd(2) and 116 connected to Vss(s)) shows that the feedback networks 110 and 112 provide a bias irrespective of the output because the feedback is tied to Vss and Vdd. Michail thus discloses controlling the output based on supply voltages. This is not the same as Applicant's claim 1 and therefore Michail does not anticipate Applicants' claim 1. Applicants submit that Michail does not anticipate Applicants' claim 1, and claims dependent on claim 1, and therefore request removal of this rejection and allowance of claims 1, 2, 3, and 4.

Claims 5-7 Rejection under 35 U.S.C. § 102(b) – Michail et al.

For the same reasons detailed above in the Claims 1-4 discussion, Michail discloses controlling the output based on supply voltages. This is not the same as Applicant's claim 5 and therefore Michail does not anticipate Applicants' claim 5. Applicants submit that Michail does not anticipate Applicants' claim 5, and claims

dependent on claim 5, and therefore request removal of this rejection and allowance of claims 5, 6, and 7.

Claims 9 and 15 Rejection under 35 U.S.C. § 102(b) – Michail et al.

As detailed above in the Claims 1-4 discussion, Michail discloses the feedback network being connected to supply voltages. These are not in Applicants' claim 9. Thus Michail does not anticipate Applicants' claim 9. Applicants submit that Michail does not anticipate Applicants' claim 9, and claim 15 which is dependent on claim 9, and therefore request removal of this rejection and allowance of claims 9, and 15.

Claim 17 Rejection under 35 U.S.C. § 102(b) – Michail et al.

As detailed above in the Claims 1-4 discussion, Michail discloses the feedback network being connected to supply voltages. Thus Michail's feedback is based on supply voltages whereas Applicants' claim 17 has no such limitation. Thus Michail does not anticipate Applicants' claim 17. Applicants therefore request removal of this rejection and allowance of claims 17.

Claims 18-21 Rejection under 35 U.S.C. § 102(b) – Michail et al.

As detailed above in the Claims 1-4 discussion, Michail discloses the feedback network being connected to supply voltages. Thus Michail's feedback is based on supply voltages whereas Applicants' claim 18 is not. Thus Michail does not anticipate Applicants' claim 18. Applicants therefore request removal of this rejection and allowance of claim 18 and claims 19, 20, and 21 which are dependent on claim 18.

Specifically with respect to claim 20, the Office asserts on page 4-5 that

In figure 1 of Michail, the output signal is "compared" with the reference voltage (Vss) by the resistive networks ...

Applicants respectfully submit that a resistive divider is different than "a comparison of said received output signal to a reference voltage" as in Applicants' claim 20. Firstly, a supply voltage is considered not stable compared with a reference voltage. Second, a resistive divider just divides the voltage, it does no comparison. Thirdly, Michail's Figure 1 shows no comparison circuitry. For these reasons as well, Applicants submit that Michail does not anticipate Applicant's claim 20, and therefore request removal of this rejection and allowance of claim 20, and claim 21, which is dependent on claim 20.

Claims 22-23 Rejection under 35 U.S.C. § 102(b) – Michail et al.

The Office on page 5 with respect to Michail Figure 1 states:

transferring a signal based on said sample of said first stacked output transistor array and said second stacked output transistor array to one or more transistors (106, 108) in said first stacked output transistor array.

Michail clearly shows in Figure 1 the feedback network being connected to the supply voltages. As detailed in Michail Figure 5 at 504, this results in the Michail Figure 1 amplifier more closely approaching the supply rails. Thus Michail transfers a signal based on the supply voltages to one or more transistors. In contrast Applicants' claim 22 transfer is based on the output signal. Michail does not anticipate Applicants' claim 22, so Applicants request removal of this rejection and allowance of claim 22 and claim 23 which is dependent on claim 22.

Claims 24-27 Rejection under 35 U.S.C. § 102(b) – Michail et al.

As detailed above in the Claims 1-4 discussion, Michail discloses the feedback network being connected to supply voltages. Thus Michail's feedback is based on supply voltages whereas Applicants' claim 24 has no such limitation. Thus Michail does not anticipate Applicants' claim 24. Applicants therefore request removal of this rejection and allowance of claims 24 and claims 25, 26, and 27 which are dependent on claim 24.

Claims 28-30 Rejection under 35 U.S.C. § 102(b) – Michail et al.

Michail discloses the feedback network being connected to supply voltages and thus biasing the network regardless of the output or feedback (see Claims 1-4 discussion above). Thus Michail's feedback is based on supply voltages whereas Applicants' claim 28 has no such limitation. Michail does not anticipate Applicants' claim 28. Applicants therefore request removal of this rejection and allowance of claims 28 and claims 29, and 30 which are dependent on claim 28.

Claim 9 Rejection under 35 U.S.C. § 103(a) – Campbell in view of Michail et al.

further in view of Yoshimura

The Office on page 6 states:

Regarding claim 9, figure 7 of Campbell shows a circuit comprising:

first to fourth transistors (87, 86, 89, 88) and a single feedback control block (72). Figure 7 of Campbell does not show the first and second feedback control blocks.

Figure 1 of Michail shows a circuit having two separate feedback control blocks (110, 112) for increasing the linearity of the output and extending the output to almost the full range (col. 3, lines 40-45). Therefore, it would have been obvious to those skilled in the art to replace the single feedback control block of Campbell with two feedback control blocks taught by Michail for increasing the linearity of the output and extending the output to almost the full range.

Applicants respectfully assert that the invention is not obvious for three reasons.

First, the USPTO has failed to demonstrate a motivation to combine the references that satisfies the motivation to combine standard embraced by the Federal Circuit. Second, even if the references are properly combined, the references fail to teach or suggest all of the elements of claim 9. Third combining the references would destroy the operation of the reference

1. Lack of Motivation to Combine References

In order to adequately set forth an obviousness rejection under 35 U.S.C. § 103(a) based upon a combination of references, the USPTO must show that a motivation to combine the references exists. Applicants respectfully submit that the USPTO has failed to satisfy this standard. In the case of *In re Rouffet*, 149 F.3d 1350 (Fed. Cir. 1998), the Federal Circuit specifically set forth the requirements that must be met by an examiner when an obviousness rejection is made based upon a combination of references. An examiner "must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination

in the manner claimed." *Id.* at 1357. There are three possible sources for a motivation to combine references: "the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." *Id.* Merely indicating that the invention is obvious to one with ordinary skill in the art based upon the combination of references is *wholly inadequate*. *Id.*

The Federal Circuit stressed the importance as to why examiners must clearly explain the motivation to combine references instead of simply stating that a motivation exists:

If such a rote invocation could suffice to supply a motivation to combine, the more sophisticated scientific fields would rarely, if ever, experience a patentable technical advance. Instead, in complex scientific fields, the Board could routinely identify the prior art elements in an application, invoke the lofty level of skill, and rest its case for rejection. To counter this potential weakness in the obviousness construct, the suggestion to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness.

(Emphasis added.) *Id.*

Here, the Office Action provides the same explanation for combining these references as that which was soundly rejected by the Federal Circuit. See Office Action, p. 6, ("Therefore, it would have been obvious to those skilled in the art to replace the single feedback control block of Campbell with two feedback control blocks taught by Michail for increasing the linearity of the output and extending the output to almost the full range"). On this basis alone, withdrawal of the obviousness rejection is justified.

Additionally, the Federal Circuit requires that the Examiner's basis for combining the references relate to the *same* problem as that which confronted the inventor. Campbell is concerned with hysteresis, Michail with linearity, and the present invention with output buffer with dynamic impedance control, these are not the same.

Firstly, Campbell is targeted to logic with adjustable hysteresis (see Title: Logic gate with controllable **hysteresis** and high frequency voltage controlled

oscillator) Michail is targeted toward making an output linear (see Title: Buffer amplifier with output **non-linearity** compensation and adjustable gain). These are the *antithesis* of each other. Nowhere in Campbell or in Michail is there any suggestion to combine such a circuitry with each other.

2. Even If The References Are Combined, The References Still Fail To Teach Or Suggest All Of The Elements Of The Claimed Invention

Firstly, the Office's assertion that it would be obvious to replace a linear type feedback circuit (Michail) into a digital hysteresis feedback circuit (Campbell) lacks support and is not at all obvious. Applicants invite the Office to expand on this naked assertion.

Secondly, as noted above in the Claim 1-4 discussion, the Michail feedback is tied to supply rails. Combining this with Campbell does not yield what Applicants have claimed.

3. Even If The References Are Combined, The References Would Fail to Operated

Finally, *replacing* the digital hysteresis feedback in Campbell with the linear type feedback of Michail would **destroy** the functionality of Campbell. (See Campbell col. 7, lines 5-46 for an explanation of hysteresis operation.)

For the above reasons Applicants submit that Applicants' claim 9 is not obvious in light of Campbell in view of Michail. Applicants therefore request removal of this rejection and allowance of claim 9, and claims 10-16 which are dependent on claim 9.

Claims 10-12 Rejection under 35 U.S.C. § 103(a) – Campbell in view of Michail et al. further in view of Yoshimura

The Office on page 6 states:

Regarding claims 10-12, figure 7 of Campbell shows the fifth and the sixth transistor (76, 81).

With all due respect, the Office has misdescribed Campbell. Campbell transistors 76 and 81 do not connect to the supply rails (see Campbell Figure 7) as in Applicants' claims 10, 11, and 12. Campbell's transistors 76 and 81 connect to other transistors (75 and 80 respectively) which then connect to the supply rails. This is different than what Applicants have claimed. Applicants therefore request removal of this rejection and allowance of claim 10, 11, and 12.

Claims 13-15 Rejection under 35 U.S.C. § 103(a) – Campbell in view of Michail et al. further in view of Yoshimura

The Office on page 6 states:

Regarding claims 13-15, the combination of Campbell and Michail includes all the limitations of claim 13 except for the limitation that the first and second feedback control blocks are transmission gate. Figures 1 and 2 of Yoshimura show that a resistive feedback control block (R1) and a passgate control block (14) are equivalent (col.3, lines 30-43). Therefore, selection between the resistive feedback control blocks and the passgate feedback control blocks is deemed to be design expedient depending upon a particular environment or an application in which the circuit of Michail is to be used. Lacking of showing any criticality, a skilled artisan would be motivated to replace the resistive feedback control blocks with the passgate feedback control blocks for having capability of varying the resistance of the feedback circuit (col . 3 lines 30-45).

Firstly, Michail is concerned with linearity and as one of skill in the art is aware, and as the Office should be aware, a passgate is not a linear device. In fact, Yoshimura clearly describes it as a switch having a high resistance in the on state and having an off state (col. 3, lines 35-43). Thus it is unlikely and in fact there is no suggestion in Michail to replace a highly linear resistor with a switch type device of Yoshimura. To do so would **destroy** the functionality of Michail.

Secondly, nowhere in Michail, Campbell, or in Yoshimura is there mention or suggestion of needing a "varying resistance."

Thirdly, as explained above Campbell is concerned with a hysteresis circuit and the introduction of a resistive element into the feedback would *destroy* the functionality of Campbell. Thus the combination of Campbell in view of Michail et al. further in view of Yoshimura does not make obvious what Applicants have claimed.

Claims 8 and 16 Rejection under 35 U.S.C. § 103(a) – Campbell in view of Michail et al. further in view of Yoshimura

The Office on page 7 states:

Regarding claims 8 and 16, the recitation "a machine-readable medium" is merely an intended use. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex Parte Masham 2 USPQ2d 1647 (1987). The driver circuit of the present application can be used in any electronic system. Therefore, the limitation "a machine-readable medium" has not been given patentable weight.

Applicants submit that the Office has misconstrued both Applicants' claims 8 and 16 and the applicability of *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Firstly, Applicants' claim 8 recites:

8. A machine-readable medium having stored thereon information representing the apparatus of claim 5.

Applicants' claim 8 nowhere recites any "manner of operating the device." Rather it explicitly states "information representing the device." *Ex parte Masham* is applicable only to a claimed apparatus is intended to be employed. That is not the case here.

Secondly, Applicants' claims 8 and 16 are a Heimlich-style claim which is a corollary to that of *In re Beauregard*, 53 F.3d 1583 (Fed. Cir. 1995) and represents an article of manufacture, not an intended use of the apparatus. See *In re Beauregard*, id at 1583-84 (noting Patent Office's finding that "computer programs embodied in a tangible medium, such as floppy diskettes, are patentable subject matter under 35 U.S.C. § 101"); United States Patent and Trademark Office, Examination Guidelines for Computer-Related Inventions, 61 Fed. Reg. 7478, 7482 (1996) ("[A] claimed computer-readable medium encoded with a computer program defines structural and functional interrelationships between the computer program and the medium which permit the computer program's functionality to be realized, and is thus statutory.").

Applicants submit that claims 8 and 16 use of "a machine-readable medium" has patentable weight, is not obvious in light of Campbell in view of Michail et al. further in view of Yoshimura and therefore Applicants request removal of this rejection and allowance of claims 8 and 16.

CONCLUSION

Applicants submit that any claim not directly discussed is addressed via the independent claim discussion on which it is dependent.

Applicants respectfully submit that all claims are in condition for allowance, and requests allowance of all claims.

The Examiner is invited to call Alan Heimlich at 408 253-3860 if there remains any issue with allowance. Cleartext email communication is authorized.

Respectfully submitted,

Heimlich Law



Digitally signed by Alan
Heimlich
DN: CN = Alan Heimlich, C =
US, O = Heimlich Law

09/09/2005

Date

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Amendments to the Drawings:

The attached sheet includes new Figure 10A, new Figure 10B, and new Figure 10C.